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Comments of the secretariat of the International Atomic Energy Agency

I. General observations

1. The secretariat of the International Atomic Energy Agency (IAEA) is grateful for the invitation extended to it by General Assembly resolution 52/165 of 15 December 1997 to assist the Ad Hoc Committee established by resolution 51/210 in its deliberations on the elaboration of an international convention on the suppression of acts of nuclear terrorism, to supplement related existing international instruments.

2. The objectives of the Agency are spelled out in article II of its statute, as follows:

> "The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose."

Pursuant to article III.A of its statute, the Agency is authorized:

> "6. To establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property ..."

3. From the foregoing, it is self-evident that the Agency welcomes all efforts aimed at thwarting attempts by terrorists to use nuclear technology as a means to achieve their unlawful ends, as well as efforts to achieve greater levels of safety for the protection of health and minimization of danger to life and property posed by the possible unlawful use of ionizing radiation by terrorists.

4. The IAEA secretariat has focused its attention on the draft thus far before the Committee (A/AC.252/L.3 and Corr.1 and 2). It examined three aspects of that text: the definitions; possible treaty overlap between the current draft and the 1980 Convention on the Physical Protection of Nuclear Material (hereinafter "the Physical Protection Convention");[1] and physical protection and exchange of information.

II. The definitions

5. It should be emphasized that the comments presented below are tentative and subject to review and change, as the need arises to reformulate the terms to fit into a given context and to more accurately reflect the intended meaning.

6. Paragraph 1 of article 1 of the current draft defines "an act of nuclear terrorism" and is discussed below in the context of the discussion of the treaty overlap. The remaining paragraphs of article 1 set out definitions of eight

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terms. They are taken up in the order in which they appear in the draft.

7. The definition of "nuclear material" in the draft, as its explanatory memorandum points out, is derived from the definition contained in the Physical Protection Convention. Other definitions of "nuclear material" are found in the practice of the Agency with particular reference to fissionable and source material and the nuclear fuel cycle. Those definitions are employed for particular purposes such as non-proliferation (Agreements between States and the Agency for the Application of Safeguards) and civil liability for nuclear damage (1963 Vienna Convention on that subject).

8. In the view of the Agency secretariat, the definition of "nuclear material" contained in the Physical Protection Convention would, as proposed, best serve the purposes of the current draft. The intention is to cover particular materials which require physical protection because of the dangers posed should the material in question fall into the wrong hands or be accessible for unauthorized use.

9. The definition of "nuclear fuel" set out in paragraph 3 of article 1 of the current draft largely reproduces the definition contained in the 1963 Vienna Convention on Civil Liability for Nuclear Damage (hereinafter "the 1963 Vienna Convention").[2] In our view it serves no purpose to depart from that definition by indicating that such fuel includes "nuclear material" which has already been defined in the preceding paragraph. We would thus suggest that the definition follow the 1963 model and read: "'nuclear fuel' means any material which is capable of producing energy by a self-sustaining chain process of nuclear fission". This definition is meant to cover material used in nuclear power plants: the important distinction between this material and that used for weapons is that the chain process in this case is controlled to produce energy; for a weapon the chain process is uncontrolled to produce an explosive effect (see para. 20 below).

10. "Radioactive products" is the subject of paragraph 4 of article 1. It is derived from the 1963 Vienna Convention, which included a combined definition of "radioactive products and waste". That definition, as well as that proposed in the current draft, makes clear that the material is produced in, or made radioactive during, the production or utilization of nuclear fuel. Since 1963, most of this material has come to be known in Agency practice as "spent fuel" or "radioactive waste", the term "radioactive products" no longer being employed. In addition, the exclusion at the end of the current definition with regard to certain radioisotopes may have made sense in the conclusion of a treaty dealing with no-fault liability of the operator of a nuclear power plant, but the exclusion of such highly radioactive isotopes from the current draft would be ill-advised.

11. However, the definition provides a useful description of the type of radioactive by-products which are generated as a result of burning nuclear fuel. It may also cover certain objects such as instruments or equipment which may not be covered by existing definitions of "spent fuel" or "radioactive waste". With respect to those two terms, within the Agency an important distinction exists: in the case of spent fuel, future use of the material (such as reprocessing to extract uranium and plutonium as a fuel for power generation) is not excluded; whereas for radioactive waste, no further use is foreseen. Such a distinction was important in devising rules for the safety of the management of such materials, as evidenced by the form and content of the recently adopted Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (hereinafter "the Joint Convention"),[3] but such a distinction may not be as important for the purposes of the current draft, the aim of which is to be all-embracing, dealing with dangerous or hazardous material generated as a result of burning nuclear fuel. Within that context and drawing from elements of the Joint Convention, a new definition combining elements of the current drafts "radioactive products" and "radioactive waste" could be envisaged in order to provide a comprehensive definition, without the need to enter into the technical aspects of the definitions of spent fuel and radioactive waste, while including both of these materials in the definition. Such a draft would read as follows:

> "'Radioactive products' means any radioactive material produced in, or any material made radioactive by exposure to the radiation incidental to, the production or utilization of nuclear fuel, including materials, goods, instruments, equipment and objects of biological origin, with radionuclides at concentrations or activities greater than the clearance levels established by the competent regulatory authority of a State;"

12. The last term defining a material is "radioactive substances", in paragraph 6 of article 1. Its text makes clear it is intended to cover all other substances not already covered by the preceding terms, which may be deemed hazardous to human life and health and/or may cause substantial damage to the environment.

13. The term "radioactive substances" is not defined for use within the Agency. The term "material", however, is

used in many Agency publications, including its statute, and "radioactive material" is used to some extent in Agency publications, being defined for particular purposes, for example, in the Agency's Regulations for the Safe Transport of Radioactive Material.[4] Of more relevance is the definition contained in a recent draft safety guide on "Preventing, Detecting and Responding to Illicit Trafficking in Radioactive Materials". As that definition is intended for use in dealing with the illegal use of the material, it is suggested that "radioactive material" be used and that, drawing upon the draft safety guide, it begin as follows:

> "'Radioactive material' means material, other than that defined in paragraphs ... above, which contain nuclides which undergo spontaneous disintegration (a process accompanied by emission of one or more types of ionizing radiation such as alpha-, beta-, neutron particles and gamma rays) ..."

14. Virtually every substance, including our human bodies, contains a certain amount of radioactive nuclides which emit radiation. The point, as indicated in the current draft and its explanatory memorandum, is to cover only that radiation which is hazardous to life or health. Thus, the above definition should be completed by adding a phrase to the effect, such as that found in the current draft.

> "... and which may be hazardous to human life and health and/or may cause substantial damage to the environment;"

It is believed technically prudent to use "may be" hazardous rather than "is" since the hazardous nature may depend upon any number of variables, such as length or type of exposure to radiation. Substantial damage to property should also be included.

15. As to the meaning of "hazardous to human life and health and/or may cause substantial damage", no Agency definitions address this issue directly. Many human activities which result in exposure to ionizing radiation need to be controlled through regulation. Reference is made to a publication entitled "International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources".[5] These standards are jointly sponsored by IAEA (indeed having been approved by our Board of Governors), the Food and Agriculture Organization of the United Nations (FAO), the International Labour Organization (ILO), the World Health Organization (WHO), the Nuclear Energy Agency of the Organisation for Economic Cooperation and Development (OECD) and the Pan American Health Organization (PAHO)/WHO. While they are recommendatory, the Standards are applied in the case of the Agency's own operations and operations making use of materials, services, equipment, facilities and non-published information made available by the Agency or at its request, or under its control or supervision. The purpose of the Standards is to establish basic requirements for protection against risks associated with exposure to ionizing radiation and for the safety of radiation sources that may deliver such exposure. The potential hazard of radioactive material depends upon: the type of material (i.e., plutonium, uranium, thorium); isotopic composition (i.e., content of fissile isotopes); physical and chemical form; degree of dilution; radiation level; and quantity. If a radioactive substance or source is exempted or cleared from control by the competent regulatory authority of a State (see para. 11 above), the assumption is that the State has determined that it does not require special protective measures from the radiological standpoint.

16. From the drafting point of view, it might assist clarity and precision to recast the structure in a manner that begins by the generic term "radioactive material" and then specify that that term includes all other defined materials. Thus, paragraph 2 of article 1 could read:

> "2. Radioactive material means material which contains nuclides which undergo spontaneous disintegration (a process accompanied by emission of one or more types of ionizing radiation such as alpha-, beta-, neutron particles and gamma rays) and which may be hazardous to human life and health and/or may cause substantial damage to property or the environment. Such material includes:
>
> (a) Nuclear material as defined in paragraph 3 below;
>
> (b) Nuclear fuel as defined in paragraph 4 below; and
>
> (c) Radioactive products as defined in paragraph 5 below."

17. The advantage of this approach would be that henceforth throughout the current draft one term could be used as the "generic" term for all materials which are meant to be covered by the Convention, for example, in the term that follows.

18. The definition of "a nuclear installation" is to some extent based upon the definition of "nuclear installation" appearing in the 1963 Vienna Convention. On the other hand, the term "facility" is more often used in Agency practice and is defined in various ways depending upon the purpose. For example, in the new Model Protocol Additional to existing Safeguards Agreements,[6] "facility" refers to both installations or locations.

19. These definitions, as well as that in the 1963 Convention, are geared to the nuclear fuel cycle, rather than the concept set out in the current draft. From that aspect, it would be preferable to also draw inspiration from the 1997 Joint Convention definition of "nuclear facility", and provide that:

> "'Nuclear facility' means an installation or location and its associated land, buildings and equipment in or at which radioactive material is produced, processed, used, handled, stored or disposed of, including any nuclear reactor whether in a building or installed or carried on vehicles, trains, vessels, aircraft or space objects."

20. Turning to the final two definitions on "devices", the Agency secretariat would first wish to comment that the expression "a nuclear explosive device" is used throughout Agreements between the Agency and States for the Application of Safeguards, but is not defined therein. In a 1980 technical glossary,[7] a nuclear explosive is defined in relevant part as "an explosive which generates its energy from fission". Drawing upon that definition as well as that employed for "nuclear fuel" (para. 10 above), the following is suggested:

> "'Nuclear explosive device' means any device that is designed, or has the capability, to generate explosive energy by an uncontrolled self-sustaining chain process of nuclear fission, such as a nuclear weapon or a nuclear experimental device;"

21. With regard to "a radiation-dissemination device", it may already be covered by article 1, paragraph 3 (b), of the International Convention for the Suppression of Terrorist Bombings.

22. In view of the technical nature of the definitions, the Committee may wish to defer detailed consideration of the definitions until a later stage. The Agency and its secretariat stand ready to assist in that process.

III. Possible treaty overlap

23. By its resolution 51/210, the General Assembly mandated this Committee to elaborate an international convention for the suppression of acts of nuclear terrorism "to supplement related existing international instruments". One such instrument is the Physical Protection Convention, to which indeed the General Assembly has urged States that have not yet done so to consider, as a matter of priority, becoming parties. Thus far, 59 States are parties to that Convention, of which the Director General of the Agency is the depositary.

24. In the explanatory memorandum to the current draft, it is stated that there is a need for a new international instrument in view of the Physical Protection Convention having "a number of gaps as regards countering acts of terrorism involving the use of nuclear weapons or materials (above all at the stage of stopping the terrorist act and eliminating its consequences)". It is evident that the current draft is designed to be a self-contained instrument devoted to it specialized subject matter and supplementing related conventions in that regard. Article 13 of the draft makes this clear when it provides that nothing in the draft convention affects "the rights and obligations of States parties arising from international treaties concluded by them previously". On its face, the two conventions are to operate side-by-side.

25. It is therefore necessary to examine the relationship between the two texts. First, on the scope of application the Physical Protection Convention has two aspects: (a) as regards "criminalizing" certain acts, its provisions apply to nuclear material used for peaceful purposes while in international transport as well as in domestic use, storage and transport (article 2, paras. 1 and 2); (b) with regard to obligations to provide protection of nuclear material at levels prescribed in the annex to the Convention, it applies only to such nuclear material while in international transport (article 3).

26. The current draft, on the other hand, covers a broader range of matters. First, the items covered go beyond "nuclear material" (see the list of terms included within the scope of the draft). Secondly, the items included are without limitation as to the intended use of the radioactive material in question; for purposes of the current draft, the original use of this hazardous material (peaceful or military) is irrelevant.

27. In terms of criminalization, the Physical Protection Convention obliges States parties to make punishable under their national law the intentional commission of acts listed in article 7 of the Convention. In particular, such acts include: (a) an act without lawful authority which constitutes receipt, possession, use, transfer, alteration, disposal or dispersal of nuclear material and which causes or is likely to cause death or serious injury to any person or substantial damage to property; (b) a theft or robbery of nuclear material; (c) an embezzlement or fraudulent obtaining of nuclear material; (d) a demand for nuclear material by threat or use of force or by any other form of intimidation; (e) a threat: (i) to use nuclear material to cause death or serious injury to any person or substantial property damage, or (ii) to commit an offence in (b) above in order to compel a

natural or legal person, international organization or State to do or to refrain from doing any act; (f) an attempt to commit any offence described in (a), (b) and (c) above; and (g) participation in any of the offences referred to above.

28. Pursuant to the current draft, each State party must establish as criminal offences under its legislation acts of nuclear terrorism as defined in article 1, paragraph 1. In that connection it may be recalled that paragraph 1(a) (i) of the definition of "an act of nuclear terrorism" could be made simpler by employing a generic term to cover all the materials, as mentioned in paragraphs 16 and 17 above. Thus, the subparagraph would read: "The use or threat of use of radioactive material, its radioactive properties or a combination of its radioactive properties with toxic, explosive or other dangerous or hazardous properties".

29. The unlawful acts committed in respect of all materials or items covered by the current draft also include unlawful acts committed in respect of nuclear material in peaceful use – the subject matter covered by the Physical Protection Convention. In that respect, the acts covered by the current draft are substantially the same as those covered by the Physical Protection Convention: the use or threat of use of nuclear material; the receipt or alienation of nuclear material without the permission of the competent authorities or through fraud, theft, forcible seizure, appropriation, possession, alteration or transfer; acts constituting a demand by threat or use of force or by any other form of intimidation for the release or transfer of such material; preparing or attempting to commit any of the acts mentioned above; any type of participation in committing, preparing or attempting to commit such acts or a threat to commit them.

30. One distinction is that in order for the foregoing to be criminal in the current draft the acts must have been committed "for the purpose of causing death or serious injury to any person or harming his health, causing substantial damage to property or the environment, or compelling a natural or legal person, a group of persons, a State or an international organization to do or to refrain from doing any act". In the Physical Protection Convention, the acts in question must be done intentionally. If an act is committed for the purpose specified in the current draft, it is also committed intentionally.

31. Unlawful acts common to both texts of particular relevance are the threat to use material to cause death or serious injury to any person or substantial property damage and the commission of theft or robbery of such material in order to compel a natural or legal person, international organization or State to do or to refrain from doing any act. If such acts are committed with regard to nuclear material (as defined) in peaceful use, both the current draft and the Physical Protection Convention would apply and an overlap would exist.

32. The provisions of the two texts differ with regard to jurisdiction. Under both the current draft (article 5) and the Physical Protection Convention (article 8), a State party would be obliged to establish jurisdiction over the relevant offences in the following cases: (a) when the offence is committed in the territory of that State or on board a ship/vessel registered in it; (b) when the alleged offender is a national of that State; (c) where the alleged offender is present in that State's territory and it does not extradite him to any State mentioned in (a) or (b). At the same time, the Physical Protection Convention additionally permits a State party to establish jurisdiction when it is involved in international transport as the exporting or importing State. The current draft, however, goes further and also assigns jurisdiction to a State party when the relevant offence is committed: (a) on board a space object registered in it; (b) by stateless persons who have habitual residence in its territory, if the State deems it advisable; (c) in order to compel that State to do or refrain from doing any act; and (d) in respect of or against a national of that State or a legal person connected with that State, if the State deems it advisable.

33. The overlap existing between the two texts as regards the crimes covered, coupled with differing jurisdictional provisions, could complicate their implementation, particularly if it would lead to a result where a party to both instruments would be in a position to choose which instrument applied in a given case. Contrary to the general rule contained in article 30 of the 1969 Vienna Convention on the Law of Treaties on the application of successive treaties relating to the same subject matter, the later-in-time treaty would not apply by virtue of article 13 of the current draft (see para. 24 above). A further complication would be if for one and the same crime, some States could claim jurisdiction and request extradition under one instrument, while different States could claim jurisdiction and request extradition under the other instrument.

34. In the light of the above, States parties to the Physical Protection Convention and States elaborating the current draft should bear in mind the complications arising from overlapping treaty regimes and the desirability of maintaining consistency, stability and certainty in treaty relations; parties are entitled at any time to know what their treaty rights and obligations are with regard to a given set of facts. It is not for the secretariat of the Agency, or the Director General as depositary of the Physical Protection Convention, to propose solutions in this regard. But among

the various options or possibilities which may be mentioned are the following: (a) to develop one instrument covering both the current draft and the Physical Protection Convention, such an instrument constituting either an amendment to the Physical Protection Convention which would broaden its scope of application as proposed by the current draft or a Protocol to the Physical Protection Convention to the same effect; (b) to maintain the dual treaty regimes but adjust the current draft to eliminate overlap by providing that as between parties to both the current draft and the Physical Protection Convention, the latter Convention will govern their relations with regard to its more limited subject matter; (c) conversely, to adjust article 13 of the current draft to allow the general law of treaties to apply, so that as between parties to the current draft which are also parties to the Physical Protection Convention, in the event of overlap the provisions of the current draft would apply.

IV. Physical protection and exchange of information

35. The possible risk cannot be excluded that the theft of plutonium, highly enriched uranium or uranium-233 could lead to the construction of a nuclear explosive device by a group possessing the necessary high level of competence. The theft of these materials could lead to their use as radiological contaminants. An act of sabotage against a nuclear facility or against a shipment of nuclear material could create a radiological hazard to the public. Effective physical protection systems are therefore required to protect these materials and facilities for both non-proliferation and radiation safety purposes. While the responsibility for ensuring that such physical protection systems are properly established and operated rests with national Governments, it is also of international concern since incidents in one State can have ramifications across borders. The international community has a legitimate interest in States fulfilling their physical protection responsibilities.

36. Since 1972, IAEA has been actively involved in the area of physical protection. Recommendations have been developed for the establishment of physical protection systems covering nuclear material in use, storage and transport both domestically and internationally, as well as covering nuclear facilities. These have proved to be of importance for States in establishing their national requirements and in the conclusion of international arrangements. The Recommendations are updated from time to time. The Agency also provides advice to State authorities, at their request, in respect of their physical protection systems. These activities highlight the Agency's role in developing uniform standards in this field.

37. In 1980, the Physical Protection Convention was adopted under the auspices of the Agency, which was assigned a number of functions including maintenance of a list of national points of contact as well as a number of administrative and notification tasks, including convening the initial review conference and any subsequent review conferences. Those functions which in essence make the Agency the focal point for consultation, are viewed as important ones in maintaining ongoing cooperation and coordination in the field.

38. In response to recent heightened concern regarding the theft of nuclear material, the Agency has, over the last few years, intensified its activities in physical protection. In 1993, on the basis of a recommendation by the 1992 Review Conference of the Physical Protection Convention, a Technical Committee revised the Recommendations on physical protection.[8] There is general agreement that, taking into account technological changes, modifications to national physical protection approaches as well as policy factors, it is again timely to conduct a thorough review of the Recommendations. A review meeting will be held in June 1998, with special attention to be given to better defining the physical protection requirements to prevent acts of sabotage against nuclear facilities.

39. In 1995, the Agency started a programme for assisting States in combating illicit trafficking of nuclear material and other radioactive sources. The programme involves a number of activities, such as: assisting States with advice regarding legal and regulatory structures; maintaining an illicit trafficking database (54 States have agreed to report to the Agency incidents of illicit trafficking); physical protection activities, such as training, peer review services, development of guidance, information exchange and technical support; coordinating activities conducted by donor States in their support of State systems of accounting and control (SSAC) in the newly independent States; upgrading the effectiveness of border monitoring systems; a number of regional and international training courses on SSACs and responding to illicit trafficking; hosting annual meetings of an ad hoc inter-agency group concerned with the illegal cross-border movement of nuclear materials and other radioactive sources; fostering information exchange; and offering analytical services and other technical assistance to help characterize material seized in illicit trafficking incidents. Finally, under Safeguards Agreements States undertake to establish systems for accounting and control

of nuclear material, which contributes to the prevention and detection of illicit trafficking.

40. In the light of the above, the Agency secretariat views as constructive the idea of supplementing the international regime of standards and other arrangements to ensure adequate and effective control of nuclear and other radioactive material with a convention that would extend the coverage to the broadest possible range of radioactive material as well as nuclear facilities, explosive and other devices. In order to meaningfully prevent the unlawful use of radioactive material, not only penalties and punishment are needed. What is also required are measures of prevention, such as enhanced measures to: prevent unauthorized access to such material; protect facilities from intrusion and ready access by third parties; and develop more effective controls against illicit trafficking. This "physical protection" aspect is a key element in efforts to combat terrorist usage of nuclear technology.

41. The current draft provides an obligation that States parties shall cooperate in preventing acts of nuclear terrorism by, *inter alia*, adopting all necessary legislative, administrative and technical measures to ensure the physical protection of the materials, facilities and devices covered by the draft, as well as protection against illegal and unauthorized access to them by third parties (article 4). It does not purport to set technical levels of protection for the various materials, facilities or devices covered by the draft. This might be technically feasible if negotiating States so desired. The existing IAEA Recommendations in fact go beyond the limited physical protection measures found in the Physical Protection Convention and could be mentioned by reference in the future instrument.

42. The current draft refers to cooperation by exchanging information related to acts of nuclear terrorism (article 11). The draft convention does not, however, envisage a focal point at the international level to assist or coordinate cooperation or to assist in exchange of information. Such a mechanism is provided in a number of international instruments.

43. The Agency, apart from its depositary function, has been assigned various tasks under several treaties in the nuclear field. For example, the Agency: acts as a focal point for exchange of information (the Physical Protection Convention, the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the Case of a Nuclear Accident of Radiological Emergency and the 1963 Vienna Convention); upon request, provides various forms of assistance (the Early Notification Convention and the Assistance Convention); acts as the secretariat, including transmission of information (the Convention on Nuclear Safety and Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management); and establishes relevant criteria (the 1963 Vienna Convention and the 1997 Protocol to Amend the 1963 Vienna Convention).

44. To the extent that the future instrument deals with physical protection and exchange of information, it is desirable, appropriate and in the common interest to maintain consistency and coherence in the implementation of all related instruments in the nuclear field. For example, acts of terrorism may result in a nuclear accident or radiological emergency which would entail the application of the Early Notification and Assistance conventions, requiring the Agency to play a specific and important role. The IAEA Director General stands ready to serve as focal point for cooperation in developing uniform standards and enhanced measures of physical protection, health and security, as well as for the exchange of information, including serving as depositary of any international instrument in its field of expertise, should the Member States deem it advisable.

Notes

[1] INFCIRC/274/Rev.1; see also United Nations, *Treaty Series*, vol. 1456, No. 24631.

[2] INFCIRC/500; see also United Nations, *Treaty Series*, vol. 1063, No. 16197.

[3] INFCIRC/546.

[4] Safety Standards Series No. ST-1.

[5] Safety Series No. 115.

[6] INFCIRC/540.

[7] TECDOC-226.

[8] INFCIRC/225/Rev.3